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[TFR 294-1]

[TFR 294 consists of pages torn out of a Soviet service member's journal, containing notes from interrogations of American aircraft crews shot down over Vietnam (EB-66C and F-105D) on 4 Feb 67 and 17 Feb 67]

[This page is handwritten in pencil in its entirety]
F-4C [abbreviation probably "higher"] 300 meters above EB-66

Work Points
- Turn[ed abbreviation] on radio receivers at the 18th parallel and began to locate (by finding) SRT's [reconnaissance and target designation stations]
- At the Laos-Vietnam border, began a search of signals received from SNR [missile guidance stations] (or SON [gun-laying radar])
- Within 5 minutes they found three ZRV [SAM] sites
  North of Noj-Baj?
  1 minute northwest of Tkh Ig ?
  30 seconds west of the village of Tkxatuek?
  Possibly more!

May have found one site in the central field 30 seconds to 1 minute If all sites begin to transmit they can better determine the bearings in a straight flight, but he was shot down

Reviewed by DPMO
IAW 50 USC 435 Note & DOD 5400 7-R
Date 12Aug99 Initials TSS

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[this page handwritten in pencil in its entirety]
in a turn
These points were taken in 15 second intervals
[drawing of a triangle with three points along its base representing possible shoot-down geometry]
Possible to determine location of SNR
Distance 110-150 kilometers
SRTs 460-550 kilometers
SON 160-200 kilometers
PRV 74-92
Three types of interference
- targeted interference with a bandwidth of plus or minus 3 Mhz (6)
- sweeping [abbvreviation possibly "targeted"] interference at a frequency of 2975-3050 where [abbreviation possibly "targeting data"] sweeps across
- wide-band jamming, the best of the [abbreviation prob "variants"] (in their opinion) which is capable of jamming 2900-3050 Mhz At launch time they work in the 712-850 range

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[this page handwritten in pencil in its entirety]
~~V. S. Belyaev Expert~~
~~Yu. L. Belyaev 1~~
~~Nodya Beloslav 1~~
~~Karas' 1~~
~~Timchenko Expert~~

14 February 1967
(Get Mikhajlov from Kachanov

Second statements by the airmen taken prisoner from the RB-66 (EB-66C) shot down on 3 August 1967 by the 89th [abbreviation probably "Division"] The EB-66C was hit at an altitude of 8500-9000 at a speed of 889 kilometers per hour while in a turn north of Bak-Ka The aircraft had nine positions
[drawing of the front end of an aircraft with seven positions one in front for the "Commander, a Captain", one on the front right for the "Navigator, a Major", one on the front left for "2 airmen (which were not there)", and four near the rear, three of which have "x"s in them for the "Operators"]

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[this page handwritten in pencil in its entirety]
The following were taken prisoner
The Pilot, a Captain
The Navigator, a Major
An Operator
[symbol indicating those positions on the previous page that were x-ed out] were killed
Thailand-Laos - Bak-Ka
length 74 kilometers
width 9 2-10 kilometers
[drawing of an oval [probably orbit] with the above dimensions, with the nearest point of approach being "200 kilometers from Hanoi"]
there were 2 aircraft EB 9 kilometers, RB 8 1 kilometers
they were escorted by 4 F-4C's 9 2-14 8 kilometers away and 900 meters above
[drawing probably showing an interval of 1 8]

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[this page handwritten in pencil in its entirety]
7 February 1967
Statements by the prisoners whose RB-66 was shot down on 3 February 1967

The crew consisted of six, 2 Majors, 3 Captains, and one Junior Lieutenant They flew at an altitude of 8500, with a speed of 889 kilometers per hour Five minutes before they were hit by surface to air missiles, they could direction find Soviet Army emissions (radio impulses) on a frequency of 2945, at a distance of 110 After that, four minutes before, on a frequency of 3005, at a distance of 96 The third time, 3 5 minutes before, on a frequency of 2985 at a distance of 77

There are 26 stations on an RB-66 ~~B~~, while there are 28 stations on an RB-66 C (transmitters or receivers)

So far, active jammers are only installed on A4's or F4B's, i e deck-landing aircraft

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[this page handwritten in its entirety]
There they have ALQ-51 equipment

The jammer's power is 300 watts

The monitoring receiver's [abbreviation probably "frequency"] range is 6 Mhz
The transmitter's bandwidth is 100
The jammer's [abbreviation possibly "range"] is 6 Mhz
[It can] [abbreviation probably "jam"] plus or minus 150 (a total of 300)
We know the bandwidth where the Soviet Army works, that is 2900-3050

~~The 6th~~
Methodology for checking the [illeg abbreviation] as [illeg possibly [Regimental"]] groups in conjunction with [abbreviation possibly "specialists"]

[formula written in pen on bottom of page
"P'sub Chs' = * */8 245* *"] //P'sub Chs' could be bandwidth //

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[this page handwritten in its entirety]
Upon receipt of these frequencies, they are immediately required to warn other aircraft

154 - ~~18~~ 83 - 175
from 30-1000 Khz
PRV 2500-2600

EB creates interference, active jamming, by modulating sound frequencies

EB66 does not have equipment for [abbreviation probably "impulse"] jamming It is installed on B58 Noise jamming is better than [abbreviation probably "impulse"] jamming
R'sub avg ' = 300 W R'sub tot ' = 400 W
The receiving antenna is omnidirectional, sized for its search frequencies, while the jamming antenna is

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[this page handwritten in pencil in its entirety]
unidirectional and is located in the rear of the aircraft
Equipment
32 components
4 ALA-5's for analysis of impulses
4 APR-14's for frequency analysis
4 ALA-6's for DF
jammers
ALT-10
2 ALT-12's 30-500 Mhz
1 ALT-17(16) 500-1000 Mhz
~~5~~ 2 ALT-13's 2500-2800 Mhz
~~2~~ 5 ALT-22's 2800-10750 Mhz (didn't find any ALT-22's)
2 ALE for passive jamming
4 AJC-10 signal receivers
~~4~~ AVN-2 tape recorders
[in ink "QRC-100 4 assemblies"
- cycle of operation for the ALA-5? 15 sec
- cycle of operation for the APR-14

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[this page handwritten in pencil in its entirety]

2 We had 40 F-105F pilots in the USA They were trained [illeg stricken out] in the launching of Shrike missiles before they left for Vietnam They would make 10 launches, 3 into the air, 6 against targets but without radar, and 1 against a radar station

In practice, 50% were launched from 200-300 meters, and 50% from 300-500 meters This was using the new zoom launch

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[this page handwritten in its entirety]
- Up until just before launch work on a scale of 120
- Try to see if it's possible to have a scale of 30

[the following is all in ink and barely legible]

For 26

61 + 6 10 3 and 4 PCh lacking [illeg] Eliminated 7 00
67 + 5-9 30 SRT's [illeg] SRT's from 21 to 24 [illeg] is broken
89 + 8 10-10 30 PA receiver [illeg] [abbvs possibly "frequency generator"] is missing
93 Loss of air
66-68 from 0600 hrs to 1700 hrs loss of communications
72 + chased [illeg] PA
78 antenna selector on E + ? [illeg] is supposedly above [illeg]

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[this page handwritten in pencil in its entirety]
- ALA-6
[a drawing of an orbit labeled "I" with an arrow pointing towards "Hanoi" 120-150 [kilometers] away In addition, there are three smaller orbits, all labeled "II", all of which are nearer to Hanoi]

I Area of frequent reconnaissance

II Area for jamming when escorting bombers

?

))? [these markings probably continued from opposite page]
Jamming usually starts 5 minutes before the appearance of fighters and bombers

---

F-4C cover draws the attention of the SNR's (i e like decoys)
- They use a voice color warning system white, green, yellow, red

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[TFR 294-12]

[this page handwritten in its entirety]
white - normal
green - RTV up [RADAR]
yellow - SNR up [missile guidance]
red - missile launch or frequency 718-850 active

The accuracy of detecting Soviet Army [units] is not high, but while returning they work [illeg] and can pinpoint them

---

APD-4 12 [abbreviation possibly "centimeter"] antenna

ALT-6B [abbreviation possibly "source"] generator

Ivan Vasil'evich

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[TFR 294-13]

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Further statements by the prisoner

He was shot down by the 82nd He felt that it was exceedingly difficult to detect our [RADAR] station, [illeg], launched the Shrike, again there was no signal

In the USA, it was very easy to hit [abbreviation possibly "assigned" or "ground"] targets in training, and they fired on [abbreviation possibly "assigned" or "ground"] RADAR stations [illeg abbreviation] Here they run into difficulties, sometimes a signal exists, sometimes it doesn't

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[TFR 294-14]

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[A small schematic diagram marked with capacitive values of 1 micro Farad and 320 pico Farads, and resistive values of 1,000 and 470,000 Ohms, handwritten in pencil]

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[this page handwritten in ink in its entirety]
Con the prisoner interrogation
["QRC" handwritten in pencil over above]
There are different types of shrikes
Type 1 antenna angle [Greek letter "Theta"] = 70 degrees
Type 1A Theta = 8 deg
Launch [abbreviation prob "fragmentary"] warhead on a ballistic trajectory, and launch a second with a white phosphorus smoke warhead, that way the resulting smoke cloud is less thick The smoke stands out as though it were an incendiary device The launch distance is 24-28 kilometers in order to stay out of range of ZRV [SAMs] Launch altitude is 1 5 kilometers

[diagram of attack trajectory showing an altitude of 1 5 and a speed of 990, going into a 55 degree climb, then dropping towards the target]

Launch distance is about 24 kilometers
Launch angle is 35-40 degrees
Launch speed is 900-950 kilometers per hour
It's possible to launch as far away as 45 kilometers away, but then you need to climb

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[this page handwritten in ink in its entirety]
to an altitude of about 10 1 kilometers and an airspeed of about Mach 1 0 - 1 2

Battle Order

[Diagram showing two four-aircraft formations, one echelon left, one echelon right, with two measurements, possibly spacings, 1 5-1 8, and 150-450]

It is easy to break into pairs in order to hit objectives

F-105F's have 2 shrikes and 2 spherical bombs The shrikes are mounted on the wings The 2

- - wings, but are loaded closer to the fuselage

When conducting aerial combat, or when there's a likelihood of one, they mount one shrike and one sidewinder

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[this page handwritten in its entirety]
There will soon be a raid on the Kho-La area, 18 Feb 67 if the weather is good And on ZRV [SAM] sites

[Diagram showing two two-aircraft formations The right two are numbered 1 and 2, with the letters 'F' and 'D' below them, respectively The left two are numbered 3 and 4, also with the letters 'F' and 'D' respectively below them]

One and three F-105F, armed with 2 shrikes, one of which is the normal fragmentary type, while the second is a smoke type for marking the position They also carry spherical bombs Each aircraft has one QRC-160 [F-]105F's also have, besides jamming capability, 6750 lb (450 kilogram) bombs

The shrike is [abbreviations probably "held in reserve"] in case they

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[this page handwritten in its entirety]
lock on to any RLS [RADAR stations]
They drop the spherical bombs on the place where the smoke shrike explodes

---

New target-marker versions of shrike, sidewinder, and sparrow missiles will possibly be arriving in March

---

PVO Commander-in-Chief order no 0113 hrs dated 28 January 1967
[illeg]
Nikolaj Ivanovich Kostko
Igor' Aleksandrovich Koksharov

~~I'm meeting with Khuen~~
Send to 62
Get to know more about [abbreviation possibly "shrike" or a name]

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After launch, they make a 90 degrees turn in order to observe ZRV [SAM] positions

If they see a [SAM] launch, they drop to an altitude of 1 3 kilometers and from there bomb rocket positions Lower, they would be susceptible to ground fire They have supposedly broken our SAM parameters, and while returning, aircraft are forbidden to descend lower than they need to, thus avoiding anti-aircraft fire It is difficult to estimate the accuracy of our missiles

They believe just one fragmentary hit to be enough to disable a Soviet Army [site], but find it strange that after a Shrike hit, the SNR's continue to work

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[this page handwritten in ink in its entirety]
They find it strange that after launch, while the shrike is still in flight, SRs switch over to an equivalent That is why they've switched to this new method, i e after launching a shrike, they continue to hit the site with bombs and spherical bombs

We also still don't know what this theta = 70 degrees means, but from fragments, we have come to the conclusion that there is a new shrike variant **Vie Shrike** was written on the fragments
[drawing of a [shrike] missile]

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[this page handwritten in ink in its entirety]
F-105D has

F-105F has a 3rd variant
1 shrike and 1 QRC jammer instead of a shrike
[diagram showing a formation of four aircraft, one of which is configured with a QRC-160]

The QRC jams the 2600-3100 Mhz range

It has four units, one for targeted jamming, and three for wide-band jamming

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[TFR 294-22]

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There is a switch
[diagram of a switch, left position "jam", center "off", and right "on"]

Upon entering ZRV zone, turn on the antenna

1 Jamming will begin immediately after SNR noted active

2 Turn on jamming after missile launch ~~Upon noting a new~~ [abbreviation prob "~~frequency~~"]

F-105D's have QRC-160 jammers mounted under the wing

Missile launch sequence whichever aircraft, 1 or 3, is first to note an active SNR will launch a shrike at it